

PRECISION COATINGS SAFETY DATA SHEET

Section 1. Identification

GHS product identifier: PC6 Single Component Waterborne Polyurethane
Product number: PC6 Single Component Waterborne Polyurethane
Product use: Surface Coating
Restrictions on use: None known
Manufacture/Supplier: Precision Coatings
Address: 1325 W Sunshine Street, Ste. 508
Springfield, MO 65807
Telephone: 417-862-5738
Website: www.precisioncoatingsinc.com
Emergency telephone number: 800-424-9300 Chemtrec Contract CCN675735

Section 2. Hazards identification

OSHA/HCS status: This material is not classified as hazardous by the OSHA HazCom 2012 (29 CFR 1910.1200).

Hazard classification: This material is not classified as hazardous by the OSHA HazCom 2012 (29 CFR 1910.1200).

Section 3. Composition / Information on Ingredients

There are no hazardous components above the relevant concentration limits according to OSHA HazCom 2012

OTHER INGREDIENTS

Components	CAS #	Percent
Titanium dioxide*	13463-67-7	0-20
Aluminum hydroxide*	21645-51-2	0-3
Silica dioxide, amorphous*	7631-86-9	0-3
Carbon black*	1333-86-4	0-3
Aluminum powder*	7429-90-5	0-3
Triethanolamine**	102-71-6	0.1-0.3
Polypropylene glycol	25322-69-4	0.1-0.3
2-butoxyethanol	111-76-2	0.1-0.3

*Titanium dioxide; aluminum hydroxide; silica dioxide, amorphous; carbon black and aluminum powder are bound within the polymer matrix. **Triethanolamine is a neutralizing agent that is bound within the polymer matrix as a salt.

Section 4. First aid measures

Eye Contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. In case of irritation from airborne exposure, move to fresh air. Get medical attention if irritation develops.

Skin Contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if irritation develops. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Inhalation: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if irritation develops.

Ingestion: Do not induce vomiting. Wash out mouth with water. Remove dentures if any. Get medical attention if symptoms occur. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

Most important symptoms/effects.

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acute

Potential acute health effects

Eye contact:	Causes eye irritation.
Skin contact:	Causes skin irritation.
Inhalation:	Not available
Ingestion:	Not available

Over-exposure signs/symptoms

Eye contact:	Adverse symptoms may include the following: pain or irritation. Watering Redness
Skin contact:	Adverse symptoms may include the following: irritation redness
Inhalation:	Not available
Ingestion:	Adverse symptoms may include the following: nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Not available

Specific treatments: Treat symptomatically and supportively.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 5. Fire-fighting measures

Suitable extinguishing media:	Use dry chemical, carbon dioxide, water spray (fog) or foam.
Unsuitable extinguishing media:	Not available
Special hazards arising from the substance or mixture:	Cool closed containers exposed to fire with water spray. Will not explode on mechanical impact.
Hazardous thermal decomposition products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, smoke, oxides of nitrogen, formaldehyde, silicone compounds.
Special protective actions for fire-fighters:	Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

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Special protective equipment for fire-fighters:

Fire-fighters should wear appropriate protective equipment and self contained breathing apparatus with full face piece operated in the positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up: Eliminate sources of ignition. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Use only non-combustible material for clean-up. Recover by pumping (use explosion proof or hand pump). Use clean, non-sparking tools to collect absorbed materials. Eliminate all ignition sources. Prevent additional discharge of material is able to do so safely. Do not touch or walk through spilled material. Collect spilled materials for disposal. Wear appropriate personal protective equipment (see Section 8 Exposure controls/personal protection). Evacuate unnecessary personnel.

Section 7. Handling and storage

Precautions for safe handling: Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Empty containers retain product residue and can be hazardous. Do not reuse container. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from freezing. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept

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upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls / personal protection

Control parameters

Occupational exposure limits

U.S. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum hydroxide	TWA	1 mg/m ³	Respirable fraction
Titanium dioxide	TWA	10 mg/m ³	
Aluminum powder	TWA	1 mg/m ³	Respirable fraction
Triethanolamine	TWA	5mg/m ³	
2-butoxyethanol	TWA	20ppm	

U.S. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Titanium dioxide	PEL	15mg/m ³	Total dust
Aluminum powder	PEL	5 mg/m ³	Respirable dust
2-butoxyethanol	PEL	50ppm, 240 mg/m ³	

U.S. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Silicon dioxide	TWA	0.8 mg/m ³ 20mppcf	

Appropriate engineering controls:

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits.

Individual protection measures

Hygiene measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection:

Safety glasses equipped with side shields are recommended as minimum protection in industrial settings.

Skin protection

Hand protection:

Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

Body protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection:

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection:

Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicated this is necessary. Respirator selection must be based on known or

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anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical & Chemical Properties

Appearance

Physical state:	Liquid
Form:	Liquid
Color:	Milky to opaque
Odor:	None
Odor threshold:	Not available
pH:	Not available
Melting point/freezing point:	Not available
Initial boiling point and boiling range:	98°C (208.4°F)
Flash point:	Not applicable (water based product); however, solid material will support combustion if water has been evaporated.
Evaporation rate:	Not available
Upper/lower flammability or explosive limits:	Not available
Vapor pressure:	Not available
Vapor density:	➤ 1 Air = 1
Relative density:	1.00-1.9368
Solubility(ies):	Not available
Partition coefficient: n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available
VOC (mixed less water & exempt compounds):	Less than 50 grams/liter
Other information:	No additional information

Section 10. Chemical stability & reactivity information

Reactivity:	None known.
Chemical stability:	Stable.
Possibility of hazardous	

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reactions:	None known.
Conditions to avoid:	Water reactives
Incompatible materials:	Strong oxidizing agents. Strong acids. Strong alkalis.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/summary:	Not available
Oral:	Not available
Dermal:	Not available
Inhalation:	Not available

Irritation/Corrosion

Skin:	Not available
Eyes:	Not available
Respiratory:	Not available

Sensitization

Skin:	Not available
Respiratory:	Not available

Mutagenicity

Conclusion/Summary:	Not available
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Carcinogenicity

Conclusion/Summary:	<p>Titanium dioxide: In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50 and 250 mg/m³ of respirable TiO₂. Slight lung fibrosis was observed at 50 and 250 mg/m³ levels. Microscopic lung tumors were also observed in 13 percent of the rats exposed to 250 mg/m³, an exposure level that caused lung overloading and impairment of rat lungs clearance mechanisms. In further studies, these tumors were found to occur only under particle overload conditions in a uniquely sensitive species, the rat, and have little or no relevance for humans. The pulmonary inflammatory response to TiO₂ particles exposure was also found to be much more severe in rats than in other rodent species. In February 2006, IARC has re-evaluated Titanium dioxide as pertaining to Group 2B: "possibly carcinogenic to humans", based upon inadequate evidence in humans and sufficient evidence in experimental animals for the carcinogenicity of titanium dioxide. IARC evaluation guidelines consider the generation of tumors, in 2 different studies within the same animal species, to be adequate criteria for an assessment of sufficient evidence.</p>
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The conclusions of several epidemiology studies on more than 20000 TiO₂ industry workers in Europe and the USA did not suggest a carcinogenic effect of TiO₂ dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with exposure to TiO₂ dust. Based upon all available study results, DuPont scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.

Carbon black:

ANIMAL TOXICITY:

Rat, oral, duration 2 years
Effect: no tumors.

Mouse, oral, duration 2 years
Effect: no tumors.

Rat, inhalation, duration 2 years
Target organ: lungs.
Effect: inflammation, fibrosis, tumors.

Note: Tumors in the rat lung are considered to be related to the "lung overload" rather than to a specific chemical effect of carbon black itself in the lung. These effects in rats have been reported in many studies on other poorly soluble inorganic particles and appear to be rat specific (ILSI, 2000). Tumors have not been observed in other species (i.e., mouse and hamster) for carbon black or other poorly soluble particles under similar circumstances and study conditions.

MORTALITY STUDIES (HUMAN DATA):

A study on carbon black production workers in the UK (Sorahan, 2001) found an increased risk of lung cancer in two of the five plants studied; however, the increase was not related to the dose of carbon black. Thus, the authors did not consider the increased risk in lung cancer to be due to carbon black exposure. A German study of carbon black workers at one plant (Morfeld, 2006; Buechte, 2006) found a similar increase in lung cancer risk but, like the Sorahan, 2001 (UK study), found no association with carbon black exposure. A large US study of 18 plants showed a reduction in lung cancer risk in carbon black production workers (Dell, 2006). Based upon these studies, the February 2006 Working Group at the International Agency for Research on Cancer (IARC) concluded that the human evidence for carcinogenicity was inadequate (IARC, 2010).

Since the IARC evaluation of carbon black, Sorahan and Harrington (2007) have re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with carbon black exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McCunney (2009) to the German cohort; in contrast, they found no association between carbon black exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington.

Over, as a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated.

IARC CANCER CLASSIFICATION:

In 2006 IARC re-affirmed its 1995 finding that there is "inadequate

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evidence” from human health studies to assess whether carbon black causes cancer in humans. IARC concluded that there is “sufficient evidence” in experimental animal studies for the carcinogenicity of carbon black. IARC’s overall evaluation is that carbon black is “possibly carcinogenic to humans (Group 2B)”. This conclusion was based on IARC’s guidelines, which generally require such a classification if one species exhibits carcinogenicity in two or more animal studies (IARC, 2010).

Solvent extracts of carbon black were used in one study of rats in which skin tumors were found after dermal application and several studies of mice in which sarcomas were found following subcutaneous injection. IARC concluded that there was “sufficient evidence” that carbon black extracts can cause cancer in animals (Group 2B).

ACGIH CANCER CLASSIFICATION:

Confirmed Animal Carcinogen with Unknown Relevance to Humans
(Category A3 Carcinogen).

Reproductive toxicity

Not available

Conclusion/Summary:

Specific target organ toxicity (single exposure):

Not available

Specific target organ toxicity (repeated exposure):

Not available

Aspiration hazard:

Not available

Information on likely routes of exposure:

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects:

Eye contact:

Causes eye irritation.

Inhalation:

Not available

Skin contact:

Causes skin irritation.

Ingestion:

Not available

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact:

Adverse symptoms may include pain or irritation, watering, redness.

Inhalation:

Not available

Skin contact:

Adverse symptoms may include irritation, redness.

Ingestion:

Adverse symptoms may include nausea or vomiting.

Potential chronic health

Not available

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effects:

Section 12. Ecological information

Toxicity

Acute toxicity

Fish

Product: Not available

Specified substances:

Aluminum powder LC-50 (96 h): less than or equal to 0.16 mg/l

Aquatic invertebrates

Product: Not available

Chronic toxicity

Fish

Product: Not available

Aquatic invertebrates

Product: Not available

Toxicity to aquatic plants

Product: Not available

Specified substances:

Not available

Persistence and degradability

Biodegradation

Product: Not available

Specified substances:

Not available

Biological Oxygen Demand

Product: Not available

Specified substances:

Not available

Chemical Oxygen Demand

Product: Not available

Specified substances:

Not available

BOD/COD ratio:

Not available

Bioaccumulative potential:

Not available

Mobility in soil:

Not available

Results of PBT and vPvB assessment:

Not available

Other adverse effects:

Not available

Section 13. Disposal considerations

Disposal methods: Dispose of waste in accordance with all local, state and federal regulations.

Section 14. Transport information

DOT

Basic shipping requirements: Non-Regulated

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IATA
Basic shipping requirements: Non-Regulated

IMDG
Basic shipping requirements: Non-Regulated

Section 15. Regulatory information

US federal regulations

OSHA: There are no hazardous components above the relevant concentration limits according to OSHA HazCom 2012 (29 CFR 1910.1200).

SARA Title III Section 313 – Toxic

Chemical: Listed

Substance: 2-butoxyethanol

SARA Title III Section 302 Extremely hazardous substances:

None

SARA Title III Section 311/312 Hazard categories:

Non-hazardous under Section 311/312

Inventory Status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

* A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State Regulations

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer.
This product does not contain chemicals known to the State of California to cause birth defects or other reproductive harm.

Massachusetts RTK: Silicon dioxide (CAS 7631-86-9)
Titanium Dioxide (CAS 13463-67-7)
2,2',2"-Nitrilotriethanol (CAS 102-71-6)
2-butoxyethanol (CAS 111-76-2)
2-Propanamine,N-ethyl-N(1-methylethyl)-

New Jersey RTK: Silicon dioxide (CAS 7631-86-9)
Titanium Dioxide (CAS 13463-67-7)
2,2',2"-Nitrilotriethanol (CAS 102-71-6)
Polypropylene glycol (CAS 25322-69-4)
2-butoxyethanol (CAS 111-76-2)
2-Propanamine,N-ethyl-N(1-methylethyl)-

Pennsylvania RTK: Silicon dioxide (CAS 7631-86-9)
Titanium Dioxide (CAS 13463-67-7)
2,2',2"-Nitrilotriethanol (CAS 102-71-6)
Polypropylene glycol (CAS 25322-69-4)
2-butoxyethanol (CAS 111-76-2)
2-Propanamine,N-ethyl-N(1-methylethyl)-

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Section 16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA

HMIS® ratings Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings Health: 1
Flammability: 0
Instability: 0

Disclaimer The information on this SDS was obtained from sources which we believe to be reliable. However, the information provided is without warranty, expressed or implied, regarding its correctness. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information and recommendations are offered for the user's consideration and examination and should be used to make independent determination of the methods to safeguard workers and the environment. The conditions or methods of handling storage, use and disposal of the product are beyond our control and may be beyond our control and may be beyond our knowledge. For these reasons we do not assume responsibility and expressly disclaim any liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use or disposal of this product. It is the responsibility of the user to comply with all Federal, State and Local laws and regulations.

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